STRIP TILLAGE FOR SPRINKLER-IRRIGATED SUGARBEETS

FORUM – REDUCED/STRIP TILLAGE

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U.S. Dept. of Agriculture
Agricultural Research Service

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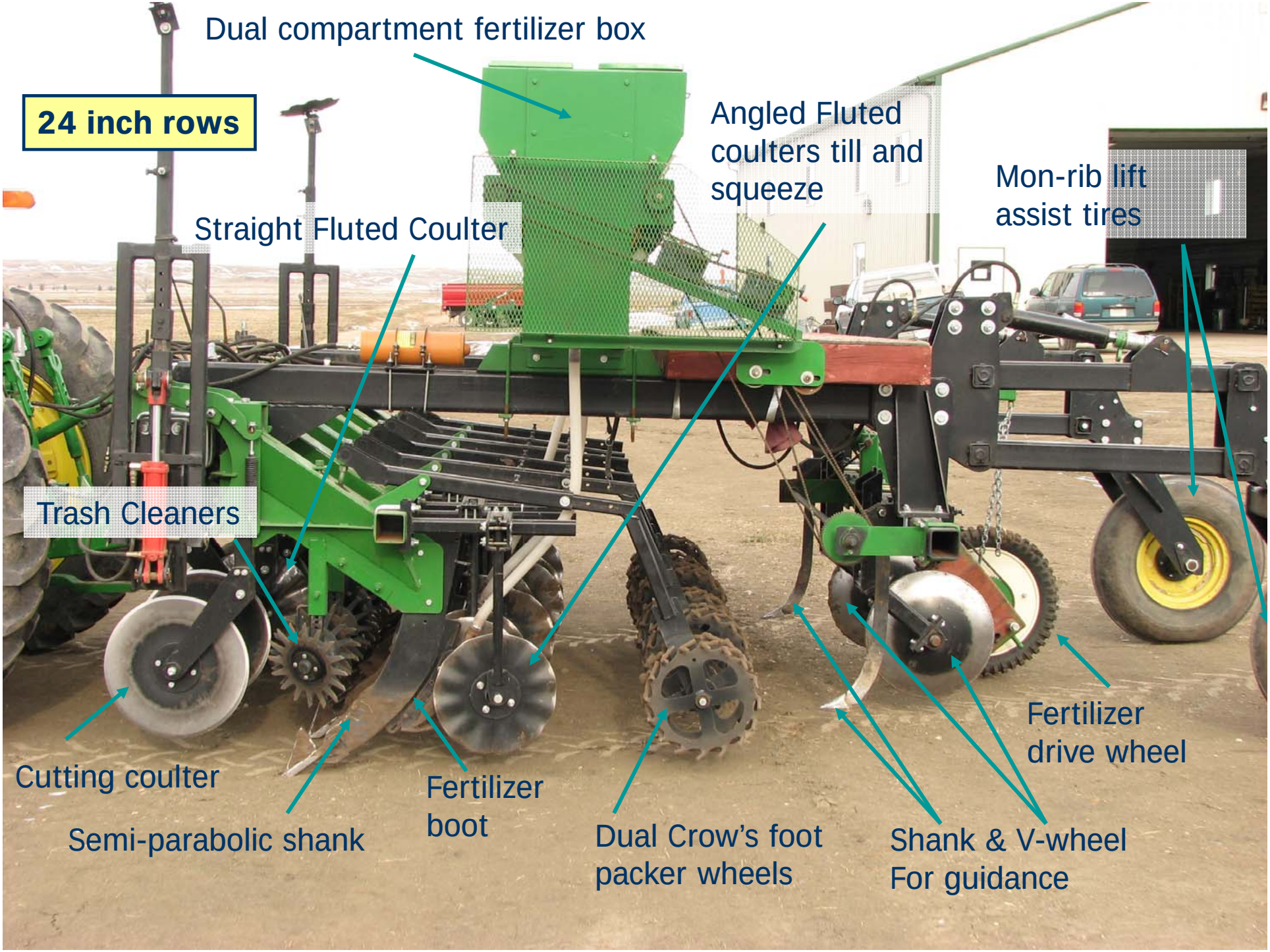
Conventional Sugarbeet Tillage
Furrow & Sprinklers

- **Typical Fall Prep (Yellowstone Valley):**
  - Broadcast fertilizer (all N-P-K)
  - Disking barley residue
  - Moldboard or chisel plowing
  - Leveling-1 to 2X
  - Mulching
  - Bed formation

- **Soil is a packed fine powder—for good seed contact in spring**


Dual compartment fertilizer box
24 inch rows
Angled Fluted coulters till and squeeze
Mon-rib lift assist tires
Straight Fluted Coulter
Trash Cleaners
Cutting coulter
Semi-parabolic shank
Fertilizer boot
Dual Crow's foot packer wheels
Shank & V-wheel For guidance
Fertilizer drive wheel

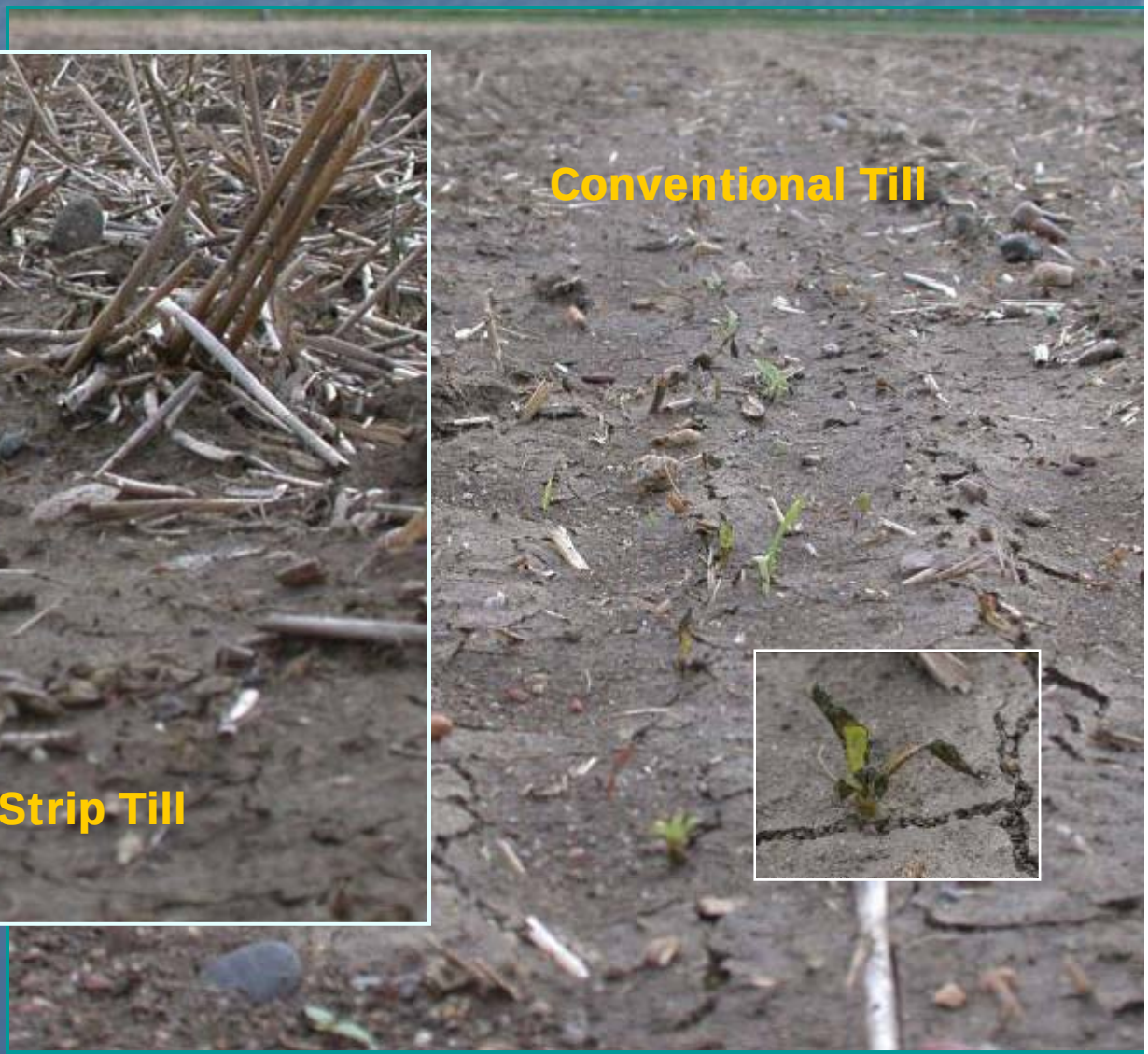
Where do I drive?
Guidance is necessary

High Precision RTK-GPS Guidance

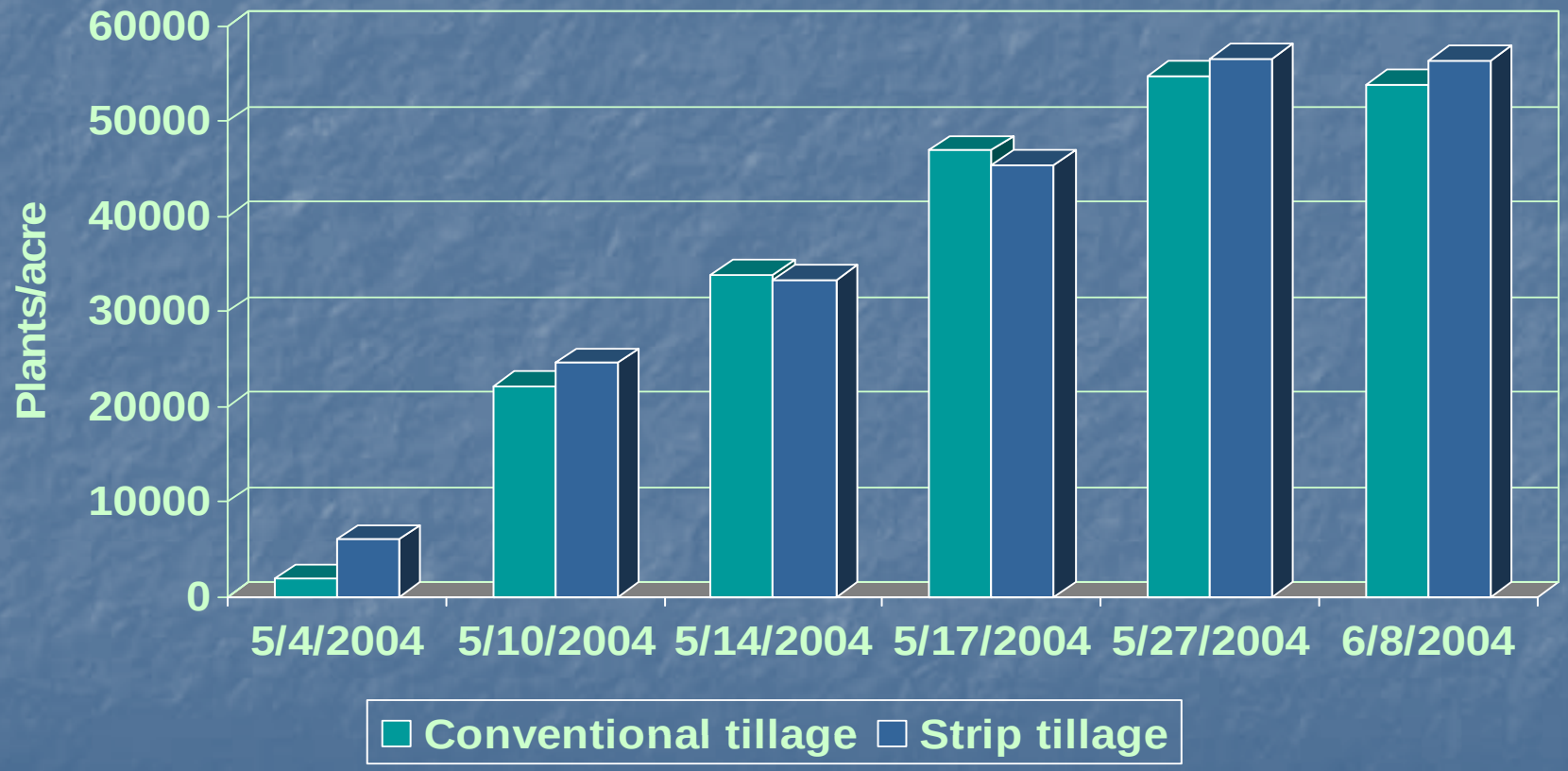
Cone-Wheel Guidance Furrow

Beets Emerge in Residue

Wind Damage--2005

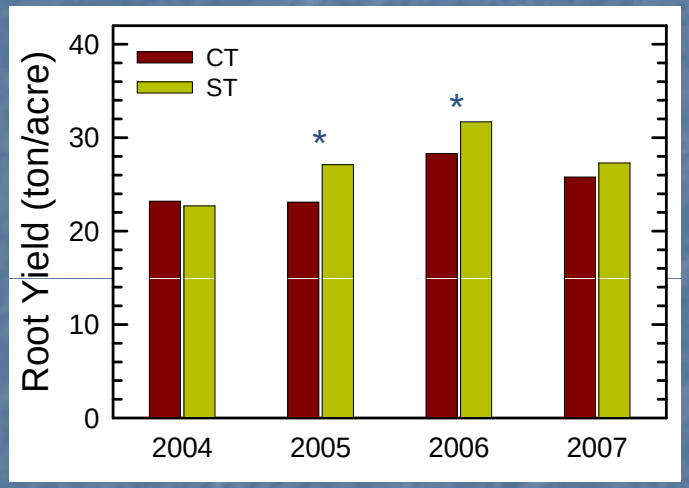


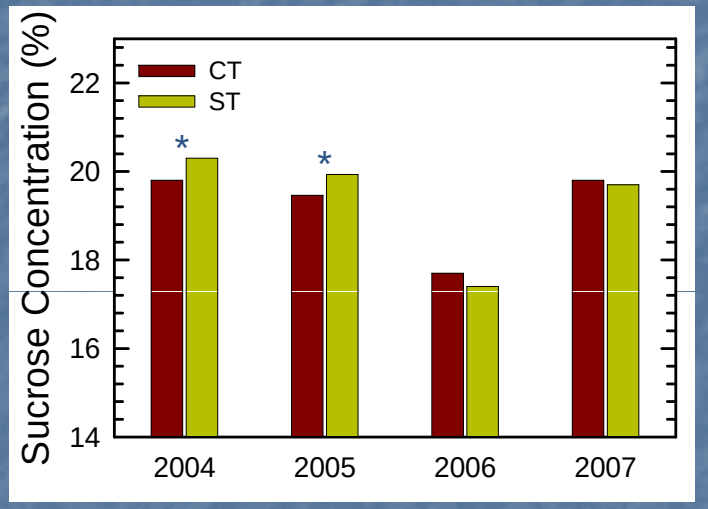
Sugarbeet Emergence 2004

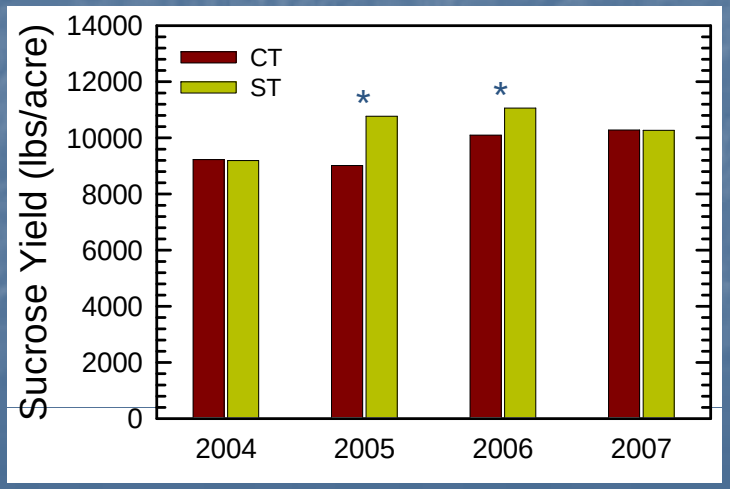


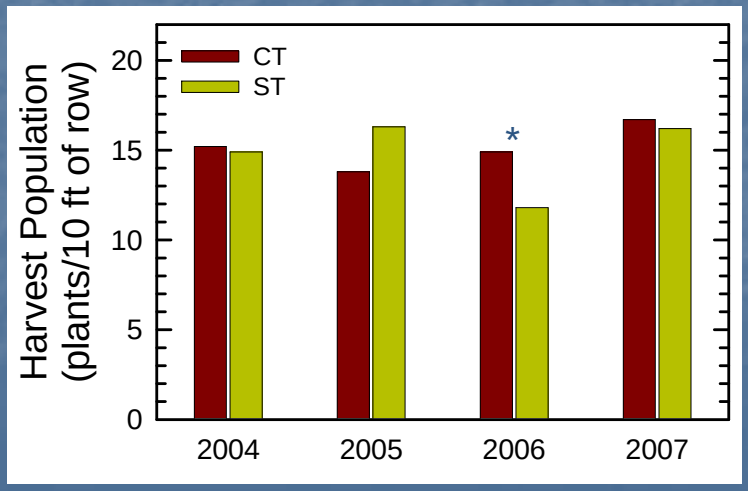
2004

Sugarbeet Yield and Quality









Strip tillage in Sandy Soil

Early Harvest

Average NV Beet Yield and Quality

Three Years, 2006-2008

Sandy soils, fall tillage

Measured Item	Conventional Tillage	Strip Tillage
Beet Yields (t/ac)	28.3	28.1
Sucrose (lbs/ac)	9,938	9,859
Sugar %	17.5	17.6

2008 was Roundup Ready®

Observations
Strip Tillage vs. Conventional

- Earlier emergence
- Higher spring soil moisture
- Better protection from wind
- Yields about the same (“normally”)
- Sugar content sometimes higher? (common finding in previous studies)
- Differences in N-fertilizer response?
- CSP program for irrigated lands?

Good Fit for Strip Tillage

- **Roundup Ready® varieties**
- **Light, erodible soils**
- **Sprinkler irrigation**
- **Flat planting**
- **Wide row spacing (e.g. 30 inches)**
- **Flat field topography**

Concerns/Questions

- **Insect and disease incidence**
- **Residue management**
- **Guidance**
- **Fertilizer management**
- **Irrigation management**
- **Soil moisture during tillage**
- **Furrow irrigation**

Special Equipment Needs for Strip Till

High trash cultivator

Planter for “trashy” conditions

Fertilizer Placement

Furrow Irrigation

- Future research emphasis
- Several local producers have implemented
- Special equipment needs: Double shovels?

Thank You for Your Attention and Interest

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